

# Knowledge and awareness of doctors about herbal drugs in the Northern Border Region of Saudi Arabia

Doctor's use of herbal drugs at Northern Border Region of Saudi Arabia

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## Abstract

**Aim:** Present study aimed to estimate knowledge, attitude, and awareness of allopathic physicians regarding herbal medicine in the Northern Border Region of Saudi Arabia. Dispensing, prescribing, and use of herbal medicines have tremendously increased over the past few decades world-over, including Europe and the USA. Herbal drugs are claimed as safe but are reported to have serious adverse effects and drug interactions with allopathic medicines.

**Material and Methods:** This cross-sectional study, using a self-administered questionnaire, was conducted with general practitioners and physicians in major hospitals, and primary healthcare centers in Arar, the main city of Northern Border Region. Data were analyzed using SPSS, version 25.

**Results:** From 117 participants, 65% were female doctors, 32% were males, and 3% did not respond. General practitioners and rest specialists accounted for 40%; 84% of patients and 66% of doctors had used herbal medicine for some ailment. Some patients (43%) liked to discuss with their doctors about herbs, but doctors usually avoided. Many doctors (68%) knew that herbal medicines can produce adverse effects or drug interactions with allopathic medicines (60%).

**Discussion:** Herbal drugs are commonly consumed in the Northern Border Region of Saudi Arabia and allopathic physicians of the region are mostly aware that herbs can cause adverse effects and drug interactions.

## Keywords

Herbal medicines; Physicians' awareness; Allopathic medicines

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## Introduction

Herbal drug use (prescribing, dispensing, and patient use) is increasing dramatically worldwide. In 1998, approximately 20% of survey participants in the UK reported using herbal or homeopathic medicine during the previous 12 months and the sale of herbal medicines grew by 50% in the UK during the period 1995–2000 [1]. A study conducted in the Riyadh region of Saudi Arabia revealed that there is a high prevalence of alternative medicine use, out of 1408 individuals participating in the study, 68% had used alternative medicine during the last 12 months [2]. According to some studies conducted in the USA, the prevalence of use of complementary/alternative medicine ranged from 9% to 65% [3]. In Germany, a herbal remedy (St John's wort) is now the most frequently prescribed drug for depression. In the USA, the sale of St. John's wort rose by 2800% between 1997 and 1998, and the total market for medicinal botanicals was worth US\$ 3.87 billion in 1998 [4]. A survey conducted in Europe for the use of complementary and alternative medicine in cancer patients suggested that complementary and alternative medicine is popular among cancer patients, with an average of 35.9% using some form of complementary and alternative medicine (range among countries: 14.8% to 73.1%) [5].

Angelo A. Izzo concluded that the interactions between herbal medicines and synthetic drugs exist and can have serious clinical consequences [6]. Some examples of those interactions stated by Angelo A. Izzo are as follows:

1. St John's wort (*Hypericum perforatum*) lowers blood concentrations of cyclosporin, amitriptyline, digoxin, indinavir, warfarin, and theophylline. Furthermore it causes intermenstrual bleeding, delirium, or mild serotonin syndrome when used concomitantly with oral contraceptives (ethinylestradiol/desogestrel), selective serotonin-reuptake inhibitors (sertaline, paroxetine, nefazodone), or loperamide.
2. Ginkgo (*Ginkgo biloba*) interactions include bleeding when combined with warfarin raised blood pressure when combined with a thiazide diuretic, and coma when combined with trazodone.
3. Ginseng (*Panax ginseng*) lowers blood concentrations of alcohol and warfarin, and induces mania if used concomitantly with phenelzine.
4. Garlic (*Allium sativum*) changes pharmacokinetic variables of paracetamol, decreases blood concentrations of warfarin and produces hypoglycaemia when taken with chlorpropamide.
5. Kava (*Piper methysticum*) increases 'off periods' in Parkinson patients taking levodopa and can cause a semicomatose state when given concomitantly with alprazolam.

In Trinidad, 192 physicians were interviewed, seventy-eight physicians (40.6%) admitted having used herbs in the past, and 60 of them (76.9%) were satisfied with the outcome. Although 52 physicians (27.1%) recommended the use of herbs to their patients, only 29 (15.1%) were able to identify at least one known herb-drug interaction [7]. Kathi J Kemper reported that clinicians have a moderate level of knowledge and confidence, but poor communication skills about herbs and

dietary supplements [8]. Jeffrey R. Suchard and his colleagues also reported that the physicians and medical students had little training in herbal toxicities and drug interactions. They generally rated their familiarity with these topics as 'poor' [9]. Physicians often lack the basic knowledge of herbal medications to effectively counsel patients regarding adverse effects and potential herb-drug interactions [10].

The present study was designed to estimate the knowledge, attitude, and awareness of general practitioners and physicians about the use of herbal medicine in the Northern Border Region of Saudi Arabia.

## Material and Methods

This cross-sectional study using a self-administered questionnaire was conducted in the Northern Border Region of Saudi Arabia, targeting health care providers (general practitioner and physicians) in the two major hospitals and all primary health care centers in Arar city, to assess their knowledge, attitude, and awareness about the use of herbal medicines. Data were analyzed using statistical program SPSS, version 25. Descriptive statistics were done for all variables. Doctors serving in the Northern Border Region of Saudi were estimated to be 985. From this finite population, the margin of error was adjusted at 8, confidence interval at 95%, and the calculated sample size was 131.

## Results

A total of 131 doctors were contacted, 117 agreed to participate in the study, and filled the questionnaire. Thus, the overall response rate was 89.3%. Response rates of approximating 60% are usually considered acceptable for most survey studies [11].

Table 1 reflects the demographic data of the participants; 65% were female doctors, 32% were male and 3% did not respond to this question; 40% had a bachelor's degree while the rest were postgraduates; 40% of doctors were general practitioners and the rest were specialists at different departments of the two major hospitals in Arar city or having their private clinics. Results in Table 2 revealed that quite a few numbers of doctors (84%) do come across patients using herbal medicine in the northern region of Saudi Arabia. Some patients (43%) liked to discuss with their doctors about herbal medicines. Many doctors themselves used herbal medicine for some ailment (66%) and 70% of them said they benefitted. Similarly 70% of patients also agreed that they benefitted from the use of herbal medicines.

Table 3, which reflects the attitude of doctors towards herbal medicine, depicted that doctors had the opportunity to discuss herbal medicines with their patients, but usually on the patients' initiative (58%). Usually, doctors were reluctant to discuss herbal drugs with their patients. The reason is that majority of doctors (90%) had no opportunity for herbal medicine education during their medical carrier, although they do want to learn more about herbs. Most of the doctors (68%) know that herbal medicines can produce adverse effects. Similarly, (60%) are aware of the possibility of drug interactions of herbs with allopathic medicines.

**Table 1.** Demographic data of doctors in the Northern Border Region participating in the study

Variable	No. (%)
<b>Gender</b>	
Male	38 (32)
Female	76 (65)
Not respond	03 (3)
<b>Qualifications</b>	
Missed	07 (6.0)
Others	07 (6.0)
PhD or Equivalent	13 (11.1)
Masters	44 (37.6)
Bachelor	46 (39.3)
<b>Specialty</b>	
Missed	02 (1.8)
Gynecologist	06 (5.1)
Psychiatrist	09 (7.7)
Pediatrician	10 (8.5)
Surgeon	11 (9.4)
Others	16 (13.7)
Physician	17 (14.5)
GP	46 (39.3)

**Table 2.** Awareness of doctors regarding herbal medicine use in the Northern Border Region

Question	No. (%)
Have you ever come across with a patient using herbal medicine?	
Missed	5 (4.3)
No	28 (23.9)
Yes	84 (71.8)
How often do you come across with patients using herbal medicine?	
Missed	03 (2.6)
Never	13 (11.1)
Very often	14 (12.0)
Rarely	20 (17.1)
Often	21 (17.9)
some times	46 (39.3)
How often your patient discusses with you herbal medicines at practice site?	
Missed	01 (0.9)
Very often	10 (8.5)
Never	18 (15.4)
Often	21 (17.9)
Rarely	24 (20.5)
Some times	43 (36.8)
Have you ever used herbal medicine yourself?	
Missed	04 (3.5)
No	47 (40.2)
Yes	66 (56.4)
Did you benefit from the herbal medicine you used?	
Missed	03 (2.6)
No	44 (37.6)
Yes	70 (59.8)
Did your patient using herbal medicine benefit from its use?	
Missed	04 (3.4)
NO	43 (36.8)
Yes	70 (59.8)

**Table 3.** Attitude of doctors regarding herbal medicine use in the Northern Border Region

Question	No. (%)
If you discuss herbal medicine use with your patients, the discussion is:	
Missed	06 (5.2)
One time discussion	13 (11.1)
Self-initiated	20 (17.1)
Ongoing-discussion	20 (17.1)
Patients initiated	58 (49.6)
What barriers limit the discussion of herbal medicines with your patients?	
Missed	06 (5.1)
Not interested in the subject	21 (17.9)
No scientific evidence for herbs	25 (21.4)
Lake of time	28 (23.9)
Lack of herbal knowledge	37 (31.6)
Have you ever tried to learn about herbal medicine used by your patients?	
Missed	01 (0.9)
Very often	07 (6.0)
Rarely	14 (12.0)
Never	24 (20.5)
Often	27 (23.1)
Sometimes	44 (37.6)
Have you ever received any continuing education on herbal medicines?	
Missed	10 (8.6)
Yes	17 (14.5)
No	90 (76.9)
By what source would you like to learn about herbal medicines?	
Others	12 (10.3)
Books	14 (12.0)
Computer database	16 (13.7)
Brochures	22 (18.8)
Internet	53 (45.3)
Do you know that herbal medicines can cause side effects?	
Missed	01 (0.9)
No	48 (41.0)
Yes	68 (58.1)
Do you know that herbal drugs can cause drug interactions with allopathic drugs?	
Missed	02 (1.7)
Yes	55 (47.0)
No	60 (51.3)

**Discussion**

Herbal medicine also called botanical medicine, phytomedicine, or phytotherapy refers to herbal products that contain parts of plants or other materials as active ingredients. The plant parts used in herbal therapy include seeds, berries, roots, leaves, fruits, bark, flowers, or even the whole plants. For centuries man was mainly dependent on crude botanical material for medical needs to retain vitality and cure diseases [12]. In the early 19th century, when chemical analysis first became available, scientists began to extract and modify the active ingredients from plants. Later, chemists started making their own version of plant compounds, and, over time, the use of herbal medicines declined in favor of allopathic drugs. Even in the present modern era, almost one-fourth of pharmaceutical drugs are derived from botanicals [13]. Since the latter part of the last century, the use of herbal

medicines is becoming popular again and has become mainstream throughout the world. This is due in part to the recognition of the value of traditional medical systems, particularly of Asian origin, and the identification of medicinal plants from indigenous pharmacopeias that have been shown to have significant healing properties. Generally, these formulations are considered much less toxic than most allopathic medicines. In the Western world, the concept that 'natural' is better than 'synthetic' has led to the resurgence of herbalism [14].

Recently, the World Health Organization has reported that 80% of the world population relies upon herbal medicines for their primary health needs. In Germany, about 600 to 700 herbal medicines are available and around 70% of German physicians prescribe them. In the United States, also, because of the growing costs of prescription medications and public interest in natural remedies, the use of herbal medicines has increased many folds since the last 2-3 decades [12].

However, many of the claims regarding the safety and efficacy of alternative medicines are controversial. It is generally agreed that herbal therapies lack the required scientific validity and their efficacy is unproved or even disproved. Moreover, research on them is mostly of poor quality and methodology and lack similarities in the standardization of products [15, 16].

Some herbal therapies have been associated with unexpected side effects, which could be fatal. The reasons behind this are that the conventional medicines are thoroughly tested for undesirable adverse effects before they are approved for sale or use. On the other hand, herbal therapies, mostly, are not subjected to such testing. Any treatment, herbal or allopathic, that has a beneficial therapeutic or psychological effect on a patient, is most likely to have potential harmful biological or psychological response. Some particular types of patients such as those having liver or kidney disease are more prone to get such problems with herbal products [17-19].

Another very alarming issue about herbal medicines is the way these products are regulated. For example in the UK and the European Union, there have been significant developments in how herbs should be assessed before they are permitted for sale. Despite all this, it has been reported that the regulatory agencies have been ineffective in preventing the deception of patients, because herbal pharmaceuticals have simply changed the labels of their drugs to escape from the new legislation [20]. Herbs are generally classified as dietary supplements, so they can be produced, sold, and marketed without going through approval, e.g. from the FDA in the USA. In reality, herbal medicines are used with specific therapeutic goals i.e. they are presented as having a medicinal role. Herbal drugs should not be mixed with food supplements in terms of regulatory matters for manufacturing and sale. A clear conceptual distinction should be maintained between the two categories, i.e. food additives and herbal medicines. Therefore, rules and regulations for development, manufacturing, and sale pertinent to allopathic medicines must also be applied for herbal drugs [21].

### Conclusion

The use of herbal medicines is increasing once again all over the world. Although they are claimed to be safe and effective, they do possess adverse effects and can cause serious interactions with allopathic medicines. Therefore, it is pertinent that their

development, dispensing, sale, and use be governed by proper legislation like allopathic medicines and categorized differently from food additives. Moreover, the physicians should be aware of both their beneficial as well as potential adverse effects and allopathic drug interactions. The present study revealed that physicians in the Northern Border Region of Saudi Arabia had a moderate degree of awareness about the herbal remedies regarding their clinical applications, adverse effects, and drug interactions. More efforts are needed for the improvement of the knowledge of doctors in the Northern Region of Saudi Arabia about the useful and harmful effects of herbs.

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### Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

### Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

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### Conflict of interest

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